

## **A New Species of *Pholcus* (Araneae: Pholcidae) from Korea**

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### **ABSTRACT**

*Pholcus joreongensis* sp. nov. (Pholcidae) is described with illustrations. This species is very similar to *Pholcus clavimaculatus* Zhu and Song, 1999 in shape of unculus and embolus of male palpal organ. But it is distinguished from the latter by size of unculus, length of embolus, shape of procursus and trochanter spur, and lengths of 3rd and 4th leg.

Key words: new species, *Pholcus*, Pholcidae, Araneae, Korea

### **INTRODUCTION**

Spiders of the genus *Pholcus* C. L. Koch have the smallest median eyes and two triads, thin and long legs, and elongate and pliable abdomens which are more than twice as long as the cephalothorax. They inhabit mainly under rocks, in cracks of rocks, and in dark locations, hanging in inverted position beneath the irregular webs. The chitinized epigynum of female and the huge male palp are critical characters for generic distinction (Paik, 1978a, b; Deeleman-Reinhold, 1986).

*Pholcus* comprising 14.8% (112 species) of 756 species of the family Pholcidae is the largest genus in the family. Among fifty three Palearctic *Pholcus* species, ten species including seven endemics have been discovered in Korea (Paik and Kim, 1994; Platnick, 2004).

In the present paper, a new species, *P. joreongensis*, from Mungyeongseje, Mt. Weolak and Mt.

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Sobaek, Korea, is described and illustrated.

Term and abbreviations used in this paper are as follow: Index, (width/length)  $\times$  100; Leg I, length of leg I; c, carapace length; Fem. I, length of femur I; Tib. I, length of tibia I; Met. I, length of metatarsus I; Pat. I, length of patella I.

## SYSTEMATIC ACCOUNTS

Family Pholcidae C. L. Koch, 1851

Genus *Pholcus* Walckenaer, 1805

### ***Pholcus joreongensis* sp. nov. (Fig. 1)**

**Material examined.** Holotype: Male, Mungyeonseje (Gyeongsangbuk-do), 16 Jul. 1999. Paratype: 9 females, 3 males, Mt. Weolak, 14 Aug. 2000; 1 female, Mungyeonseje, 26 Oct. 1999; 4 females, Mungyeonseje, 14 Aug. 2000; 5 females, 1 male, Mt. Sobaek, 15 Aug. 2000. All type specimens are deposited in the collection of Department of Biology, Keimyung University.

**Male** (holotype). Carapace yellow except for dark brown pattern connecting anterior median eyes, lateral and posterior sides from a linear median furrow; wider than length with index 105; cervical groove distinct and median furrow linear. Cephalic region remarkably raised; cephalic width index 29. Clypeus height about 5.8 times of diameter of anterior median eyes. Eye row index 93. Eye area index 125. Eye ratio, anterior lateral eye = posterior lateral eye > posterior median eye > anterior median eye (5 : 4.5 : 3). Anterior median eyes separated by a third of their diameter, by a third of their radius from laterals. Posterior median eyes about 1.3 times of their diameter apart. Anterior and posterior lateral eye and posterior median eye contiguous. Anterior and posterior median eyes separated by diameter of anterior median eyes. Median ocular quadrangle, posterior side > height > anterior side (14 : 10.5 : 7.5).

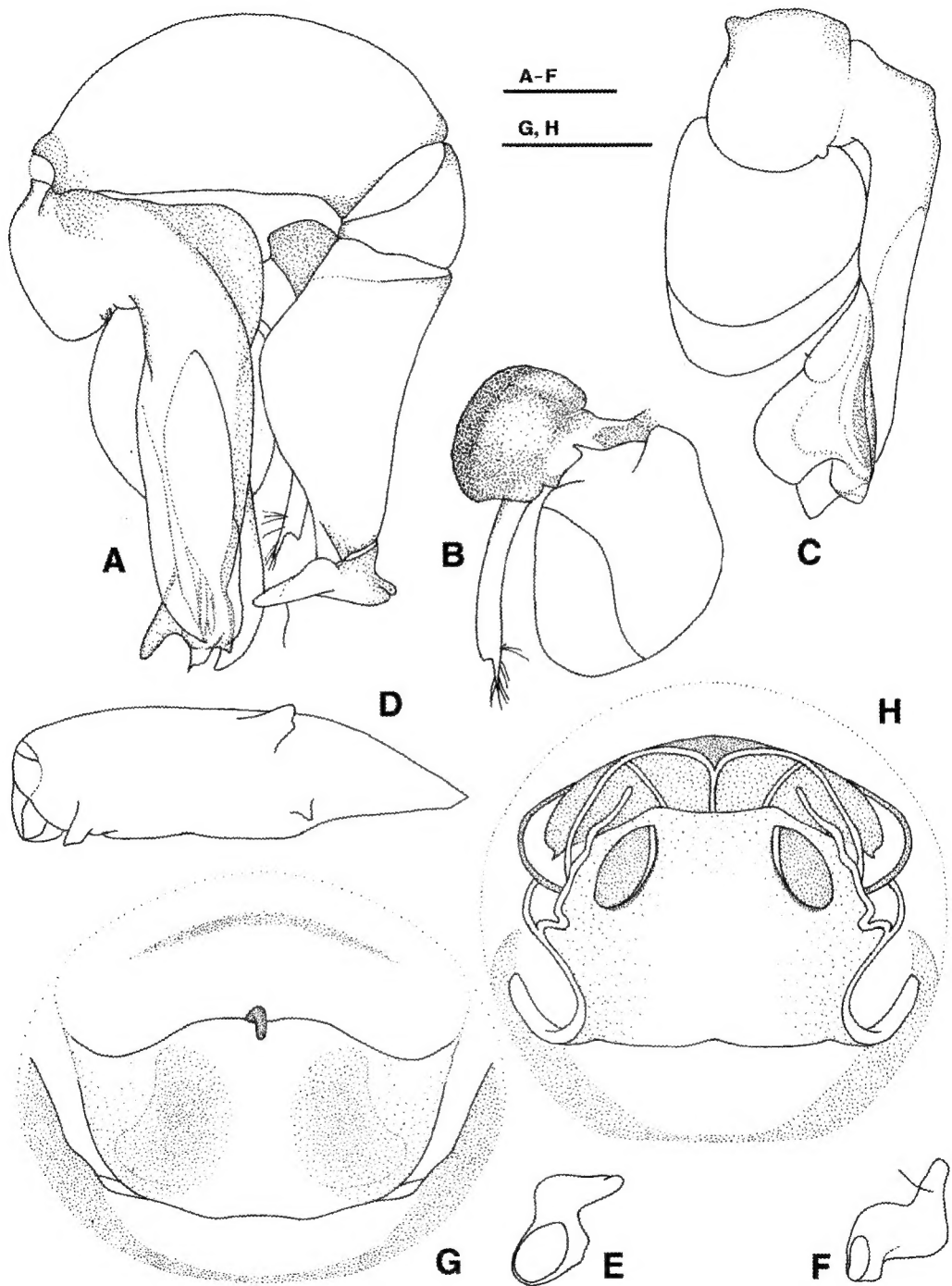
Chelicerae yellow; beak shape at tip; in the frontal view, a prominence at distal part and two at proximal part (Fig. 1D). Sternum yellow with dark brown margin, fused with labium; index 121.

Legs yellow, long and slender; furnished with hairs only. Leg formula 1243. Leg formular index 100: 69: 46: 61. Leg I/c 29.90. Fem. I/c 7.51. Tib I/c 7.49. Met I/c 13.03. Met. I/tib. I 1.74. Met. IV/tib. IV 1.59. Pat. I+tib. I/c 7.92.

Abdomen cylindrical in index 40; dorsum yellow with brown dots.

Palpal organ (Fig. 1A-C, E-F); trochanter spur of sharp tip; procursus right angle shape in retrolateral view, with blade tip in dorsal view; embolus narrow, and slightly longer than genital bulb, with round uncus.

**Female** (paratype). Carapace wider than length with index 95. Cephalic width index 38. Clypeus height 6 times of diameter of anterior median eyes. Eye row index 91. Eye area index 106. Eye ratio, anterior lateral eye > posterior lateral eye > posterior median eye > anterior median eye (5 : 4.5 : 4 : 3). Anterior median eyes separated by a third of their diameter, by a third of their radius from laterals. Posterior median eyes about 1.6 times of their diameter apart. Anterior and posterior lateral eye and posterior median eye contiguous. Anterior and posterior median eyes separated by



**Fig. 1.** *Pholcus joreongensis* sp. nov. A, left palpal organ, retrolateral view; B, uncus, genital bulb and embolus, prolateral view; C, genital bulb, cymbium and procursus, dorsal view; D, right chelicera, frontal view; E, left trochanter, dorsal view; F, left trochanter, ventral view; G, epigynum; H, internal genitalia, dorsal view. Scale bars = 0.35 mm.

diameter of anterior median eyes. Median ocular quadrangle, posterior side > height > anterior side (13.5:9:7).

Sternum index 133. Leg formula 1243. Leg formular index 100: 70: 52: 70. Leg I/c 20.20. Fem. I/c 5.13. Tib I/c 5.13. Met I/c 8.20. Met. I/tib. I 1.60. Met. IV/tib. IV 1.49. Pat. I+tib. I/c 5.52.

Abdomen index 56. Chitinized epigynum with a pair of large concave plates and a tongue; internal genitalia with a pair of small pore plates (Fig. 1G-H).

**Measurements (mm).** Male (holotype)/Female (paratype): Body length 5.90/5.90; carapace length 1.85/1.76, width 1.94/1.67; cephalic width 0.56/0.63; sternum length 0.91/0.84, width 1.10/1.12; anterior eye row 0.65/0.61; posterior eye row 0.70/0.67; abdomen length 3.96/3.92, width 1.58/2.20.

Leg I 55.30/35.55 (13.90/9.20, 0.79/0.70, 13.86/9.02, 24.11/14.43, 2.64/2.38), II 37.92/25.03 (10.38/6.95, 0.79/0.70, 9.37/6.29, 15.71/9.55, 1.67/1.54), III 25.47/18.53 (7.17/5.41, 0.70/0.62, 6.34/4.49, 10.03/6.82, 1.23/1.19), IV 33.65/24.95 (9.50/7.30, 0.70/0.66, 8.45/6.25, 13.46/9.33, 1.54/1.41). Palp 4.13/1.38 (0.88/0.44, 0.44/0.19, 1.23/0.26, 1.58/0.49).

Male (variation based on 5 specimens)/Female (variation based on 10 specimens): Body length 5.54-6.07/5.10-5.98; carapace length 1.72-1.85/1.63-1.85, width 1.72-1.94/1.58-1.76; cephalic width 0.56-0.66/0.62-0.66; sternum length 0.88-0.97/0.84-0.88, width 1.06-1.23/1.06-1.14; anterior eye row 0.65-0.70/0.60-0.65; posterior eye row 0.70-0.77/0.65-0.70; abdomen length 3.61-4.93/3.34-4.14, width 1.41-2.20/1.32-2.55.

Leg I 44.31-55.30/35.07-39.42 (11.04-13.90/8.58-10.12, 0.75-0.79/0.62-0.75, 11.34-13.86/8.67-10.03, 18.74-24.11/14.43-16.46, 2.38-2.77/1.76-2.46), II 30.58-37.92/23.67-27.54 (8.23-10.38/6.34-7.66, 0.62-0.79/0.62-0.70, 7.83-9.37/5.94-6.91, 12.23-15.71/8.98-10.91, 1.58-1.80/1.50-1.67), III 21.65-25.47/17.73-20.02 (6.07-7.30/5.10-5.68, 0.62-0.70/0.62-0.66, 5.46-6.34/4.36-5.02, 8.32-10.03/6.56-7.66, 1.14-1.32/1.10-1.45), IV 28.29-33.65/23.54-27.06 (7.92-9.59/6.82-7.83, 0.66-0.70/0.57-0.70, 7.26-8.45/5.90-6.86, 11.00-13.46/8.80-10.34, 1.45-1.58/1.23-1.50). Palp 4.05-4.31/1.19-1.14 (0.88-0.92/0.35-0.53, 0.35-0.48/0.13-0.19, 1.23-1.32/0.26-0.31, 1.50-1.67/0.35-0.49).

**Etymology.** The specific name, *joreongensis*, is derived from the type locality.

**Remarks.** *Pholcus acutulus* Paik, 1978, *P. clavimaculatus* Zhu and Song, 1999 (see Song, Zhu and Chen, 1999), *Pholcus crassus* Paik, 1978, *P. joreongensis* and *Pholcus lingulatus* Gao, Gao and Zhu, 2002 are similar in dorsal patterns of carapace and abdomen, and in the structure of male palpal organ. Among them new species, *P. joreongensis*, shows closely similarity to *P. clavimaculatus* in shape of unculus and embolus of male palpal organ. But it is distinguished from the latter by size of unculus and length of embolus, shape of procurus and trochanter spur, and lengths of 3rd and 4th leg. It is remarkable that lengths of Fem I and Tib I of the present species are same in both sexes. *Pholcus sokkrisanensis* Paik, 1978 which is obviously different from the new species in the male palpal organ lives in the locality of type series, Mt. Sobaek, Mt. Weolak and Mungyeonseje.

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## 요 약

유령거미과, 유령거미속에 속하는 신종, 새재유령거미 (신칭) (*Pholcus joreongensis* sp. nov.)를 그림과 함께 기재한다. 이 종은 중국의 고유종인 *P. clavimaculatus*와 수컷 더듬이기관의 구돌기(uncus)와 삼입기의 모양에서 많이 닮았으나, 구돌기의 크기, 삼입기의 길이, 후측면부배엽(procurus)과 전절돌기의 모양 그리고 셋째와 넷째 다리의 길이에서 잘 구별이 된다.